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<p>(21) International Application Number: PCT/US97/17920</p> <p>(22) International Filing Date: 10 October 1997 (10.10.97)</p> <p>(30) Priority Data: 08/729,602 11 October 1996 (11.10.96) US</p> <p>(71) Applicant (for all designated States except US): CASINO DATA SYSTEMS [US/US]; 3300 Birtcher Drive, Las Vegas, NV 89118 (US).</p> <p>(72) Inventors; and</p> <p>(75) Inventors/Applicants (for US only): DICKENSON, Robert, M. [US/US]; 3300 Birtcher Drive, Las Vegas, NV 89118 (US). SCHNEIDER, Richard, Jay [US/US]; 3300 Birtcher Drive, Las Vegas, NV 89118 (US). MCKAY, Linn [US/US]; 3300 Birtcher Drive, Las Vegas, NV 89118 (US).</p> <p>(74) Agent: KRETEN, Bernhard; Suite 245, 77 Cadillac Drive, Sacramento, CA 95825 (US).</p>		<p>(81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT, UA, UG, US, UZ, VN, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published With international search report.</p>	
<p>(54) Title: GAMING MACHINE CURRENCY APPARATUS AND METHOD THEREFORE</p> <p>(57) Abstract</p> <p>A gaming machine (10) and method including a housing (20) having a door (6) which exposes a currency mechanism (40) along a medial portion thereof and located between a side wall (2a) and a monitor (26). The currency mechanism receives and dispenses currency.</p>			

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Gaming Machine Currency Apparatus and Method Therefore

Technical Field

5 The following invention relates to gaming machines in general and in particular to machines for which currency can be admitted into the gaming machine to enable a player to use the machine.

Background Art

10 Gaming machines have evolved from devices which only receive coins as the enablement for play to devices where either coins or currency can be used. One problem in utilization of a currency apparatus involves locating it strategically on the machine, not only for ease of use, but also for ease of maintenance and especially for currency transfers to and from the machine.

15 Certain clearance problems exist in retrofitting existing machines with a currency receiving instrument. One problem involves accommodating traditional gaming components such as monitors typically used in video-type gaming machines and coin mechanisms. Coin mechanisms have coin receiving slots leading to a chute, hopper and to a storage and dispensing area. A currency mechanism must clear these components and allow easy access.

20 The following prior art reflects the state of the art of which applicant is aware and is included herewith to discharge applicant's acknowledged duty to disclose relevant prior art. It is stipulated, however, that this reference does not teach singly nor render obvious when considered in any conceivable combination the nexus of the instant invention as disclosed in greater detail hereinafter and as particularly claimed.

25 PATENT NO. ISSUE DATE INVENTOR
5,113,990 May 19, 1992 Gabrius, et al.

The patent to Gabrius, et al. teaches the use of an externally mounted bill validator and change system for a slot machine. This device is distinguishable from the instant invention in that, *inter alia*, it is not internally mounted.

30 Disclosure of Invention

The instant invention accommodates the clearance and engineering problems delineated hereinabove by providing a monitor disposed in substantially the same horizontal plane as the currency mechanism such that the currency mechanism is adjacent one side wall of a housing of the gaming device and abuts

against the monitor support area. The currency mechanism is deployed substantially amidships with respect to a long axis of the machine so that an area directly below the monitor and currency mechanism can receive the coin mechanism. A coin slot is located in front of a lower portion of the currency mechanism and receives a coin which diverts the coin through a chute to a storage hopper. The hopper communicates with a tray so that a player winning on the gaming machine can receive money back from the dispensing tray.

5 The currency mechanism is supported on a trackway which allows the mechanism to be accessed from its stored position within the housing and be moved to an outwardly extending position for service.

10 The currency mechanism may preferably be the type which not only receives bills, but which also sorts them as to denomination and then dispenses them upon a payout. Thus, a machine so equipped can go for greater periods of time between "fills" when an attendant is required to replenish funds within the machine. This 15 reflects several advantages because a lesser amount of money is required to reside in the machine when it is initially "stocked" because the player's money is being recirculated.

Industrial Applicability

20 The industrial applicability of this invention shall be demonstrated through discussion of the following objects of the invention.

Accordingly, it is an object of the present invention to provide a new and novel gaming machine.

A further object of the present invention is to provide a device as characterized above which is extremely durable and reliable in use.

25 A further object of the present invention is to provide a device as characterized above requires less maintenance.

A further object of the present invention is to provide a device as characterized above in which the currency mechanism is strategically located thereby providing clearance for other components.

30 Viewed from a first vantage point it is an object of the present invention to provide a gaming machine comprising, in combination: a housing including a top portion, a middle portion and a bottom portion, the middle portion including a front wall having two side portions and means for supporting a currency means along one side portion thereof and exposed on the front wall.

35 Viewed from a second vantage point it is an object of the present invention to provide a method for reducing fills in a gaming machine comprising: receiving currency to enable a game, sensing the currency both as to denomination and

acceptability, returning unacceptable currency, storing acceptable currency by denomination, dispensing the currency correlative with an award based on a pay table.

Viewed from a third vantage point it is an object of the present invention to provide a gaming machine comprising, in combination: a currency means medially disposed and adjacent one side of a housing, the currency means exposed on a front wall of the housing, and slide means coupled to the currency means to allow the currency means to be moved from a stored position to an exposed position, allowing access to the currency means.

These and other objects will be made manifest when considering the following detailed specification when taken in conjunction with the appended drawing figures.

Brief Description of Drawings

Figure 1 is a perspective view of the gaming machine apparatus according to the present invention.

Figure 2 details the currency mechanism in perspective according to one form of the present invention.

Figure 3 details the currency mechanism with a bill safe showing its placement into the currency mechanism.

Figure 4 is a schematic of a currency mechanism that both receives and dispenses currency.

Figure 5 is a front view of a currency receiver and dispenser.

Figure 6 is a side view of figure 5.

Best Mode(s) for Carrying Out the Invention

Referring to the drawings, wherein like reference numerals denote like parts throughout the various drawing figures, reference numeral 10 is directed to the gaming machine according to the present invention.

In its essence, and viewing figure 1, the gaming machine 10 preferably includes a round top assembly 90 has a flat bottom which is fastened onto a flat roof 12 of an underlying housing 20. The round top 90 appears as a semi-cylinder, includes a semi-circular front display 92 and includes a beacon 94 at its highest point located in a plane of vertical symmetry. The housing 20 has spaced parallel side walls 2 and a back wall 4. A door 6 defining a front wall is hinged 8 to one of the side walls and moves from an open position (not shown) to a closed position (figure 1) about arrow "A" as is well known. The open door 6 allows access to the interior and various mechanisms.

For example, the housing includes a bottom portion 15, a lowermost area of which has an underlying return tray 14 for the return of coins. The machine 10 not only receives the coins, but orients them in an operative position for subsequent dispensing via the return tray 14 should an award be due a player for having played 5 the machine and earned an award based on a pay table generally located on belly glass 22 at the bottom portion 15 on the housing door 6. Sometimes the pay table can be located on an upper portion 35 of the machine 10 via a display glass 24.

Between the upper portion 35 and the bottom portion 15 is the middle portion 25. This middle portion 25 includes a monitor 26 for a video game 10 apparatus. The monitor 26 is offset from a central vertical plane of the machine and is adjacent one side 2, in this case a side nearest the hinge 8. A space between the monitor 26 near wall 2a defines a channel for receipt therein of a currency mechanism 40. Access to the currency mechanism is preferably gained by either opening the door or by sliding out the currency mechanism 40 through the door 15 (figure 2).

In use, either a coin or a bill is inserted and decisions are made based on that which appears on the monitor. By manipulating a plurality of buttons 42 located on door 6 just below the monitor and on a shelf 32, the game is played. Should an award be due, the award can be dispensed via either the return tray 14 and/or via 20 the currency mechanism 40.

More particularly and with reference to figures 1 through 3, details of the currency mechanism and its ability to move between a first stored deployed position (figure 1) and a second accessible position (figure 2) can be explored. An opening 44 on wall 2a provides access to a key slot which allows the currency mechanism 40 25 freedom to move from a first position to a second position. The first position shown in figure 1 depicts the currency mechanism 40 stored within the housing of the gaming machine 10. Figure 2 shows the currency mechanism 40 free to be accessed by an attendant without having the door 6 of the gaming machine 10 opened by the attendant.

30 This important feature allows the remainder of the game to reside in a secure atmosphere free from the risk of access by unauthorized third parties who could tamper with the manner in which the game operates. It should be noted that in a gaming environment, when a door 6 of a gaming machine 10 is open it can send a signal to a control area indicating its "down" status and access to an interior of the 35 machine. Typically, in order to preserve the integrity of the gaming apparatus, access to the interior of the machine must be supervised and witnessed by various people. By allowing the currency mechanism 40 to be accessed without the door being opened, the integrity of the gaming apparatus itself is assured and the degree

of intrusion is kept to a minimum. Typically, access to the currency mechanism 40 is to remove accumulated bills. Other situations may call for removal of a "paper" jam.

In any event, access to the currency mechanism 40 is achieved via the lock 44.

5 The currency mechanism 40 shown in figure 2 includes an arcuate, medially disposed cutaway 46 on a bottom edge of a front panel 48. The cutaway 46 allows clearance for the coin slot 18 to pass thereunder when the currency mechanism 40 is moved along the double ended arrow "B" thereby gaining access to the currency mechanism exterior of the gaming machine 10 while the door 6 remains secure and
10 closed. The currency mechanism 40 may include a touch pad 52 for transmitting information such as credit information in conjunction with a card reader 54. For example, the card reader 54 is located on a front face of the currency mechanism 40 and is operatively in communication with a "controller" that monitors the status of transactions vis-à-vis the gaming machine and a central accounting area remote
15 from the gaming site. In other words, the touch pad in combination with the card reader can allow credits from a card to be displayed and utilized on the gaming apparatus 10. In addition, a slot 56 for the through passage of currency is provided. Finally, the front panel 48 can include an LED window 58 that can provide an electronic message to the user of the gaming device.

20 Figure 2 shows the currency mechanism 40 with a bill slide unit 60 already removed from a cavity 62 of the currency mechanism. The bill slide unit 60 (figure 3) stores the currency and in figure 2 is exposed for access away from the machine via a trackway 70. Typical maintenance for a machine having a currency mechanism 40 involves removing currency. The slide 60 moves along the double
25 ended arrow "C" of figure 3 by "U" shaped handle 61 fixed to an exposed surface of slide 60 in order to be received within and removed from the currency mechanism 40.

30 In figure 4, currency is received via the receiving slot 56 of figure 2. After the receiving slot, the currency is exposed to a sensing means which either accepts or rejects it based on the appearance of the bill and is a bill validator. A rejected bill is returned back to the player via receiving slot 56. An accepted bill is sorted as to denomination and then stored in a dispensing means for subsequent use. One type of bill receiver and dispenser is made by a Japanese company and distributed by JCM of 3940 E. Craig Road, Suite 101, North Las Vegas, Nevada 89031 as model HBP-10.

35 Once the bill has been accepted, the player will have been apprised of the increase in credits available to the player, and such information can commonly appear on the monitor 26 for the player's convenient viewing. In order to update the monitor, a controller is informed of the receipt and acceptance of the currency.

The controller can also monitor this activity at a remote location (not shown) and use this information as a diagnostic for other purposes, such as user tracking, machine maintenance, etc. Once it has been determined that credits are available for play, the player can enable the machine to make a wager and play. In the 5 alternative, should there be a shortage of funds, a prompt can be placed to the player either via the LED read out 58 or on the monitor 26 or both. Once the player has wagered, the player's credit has been decremented an appropriate amount and that information is received in the counter and to the controller. After the game has concluded, the outcome of the game is compared with a pay table by the machine 10 and an award is determined. If the outcome of the game warrants an increment of the counter, the counter is changed and the controller is informed. The player then can continue to play if credit exists or can cash out, in which event the dispensing means will return money via the slot 56.

In some instances, both the dispensing means and the coin return hopper 15 will act in concert to discharge to the player with the remaining credits on the machine. Assume for example that the machine plays in increments of twenty-five cents and the player has a balance of five dollars and twenty-five cents on the machine. In such a case, the dispensing means would distribute either five one dollar bills or a five dollar bill and the coin hopper would dispense a quarter.

20 Heretofore, without a bill dispenser on the machine, the coin hopper would be subjected to this demand totally in coins requiring more frequent hopper fills and greater hopper capacity. By receiving and dispensing some of the currency back to the user, games can go for greater periods of time without intervention by an attendant. As importantly, the gaming establishment is not required to keep as large 25 an amount of money in the machines to satisfy the needs of the customer. For example, if only currency is taken into the machine and not dispensed to the player, a relatively large amount of coins are required in the hopper, providing space problems in order to satisfy the needs of the player. By providing a means for dispensing currency as well as receiving currency, a much smaller amount of 30 money is required to stock the machine for regular use.

Figures 5 and 6 show a combined bill receiver/validator and dispenser 140. Bills are inserted at inlet 142. Bills are paid out at outlet 144. If the bills are not recirculated (as in figure 13), and those to be dispensed are of a single denomination, the bill dispenser 140 is used and is replenished via reservoir ingress 146. In 35 dispensing, should two or more bills be stuck together (or other anomalies be sensed) they are stored in bin 148 rather than dispensed via outlet 144.

Moreover, having thus described the invention, it should be apparent that numerous structural modifications and adaptations may be resorted to without

departing from the scope and fair meaning of the instant invention as set forth hereinabove and as described hereinbelow by the claims.

Claims

I Claim:

Claim 1 - A gaming machine comprising, in combination:
a housing including a top portion, a middle portion and a bottom
5 portion,

said middle portion including a front wall having two side portions
and means for supporting a currency means along one side portion thereof and
exposed on said front wall.

Claim 2 - The machine of claim 1 wherein said currency means includes
10 means to dispense currency upon condition of a player cashing out credits.

Claim 3 - The machine of claim 2 wherein said currency is of a single
denomination.

Claim 4 - The machine of a claim 3 including means operatively coupling
said currency means and a coin means whereby said currency means and said coin
15 means operate in concert to dispense currency and coins.

Claim 5 - The machine of claim 4 wherein said currency dispenser
includes a currency bin for receiving currency not to be dispensed due to anomalies
sensed by said dispenser.

Claim 6 - The machine of claim 5 including means for circulating currency
20 from said bill receiver to said bill dispenser.

Claim 7 - The machine of claim 2 including currency receiving means and
means for sorting currency received from said currency receiving means as to
denomination.

Claim 8 - The machine of claim 7 including means for dispensing
25 currency based on credits accumulated during play.

Claim 9 - The machine of claim 8 including means for synchronizing a
coin mechanism with said currency dispenser for dispensing both coin and
currency.

Claim 10 - The machine of claim 9 including a lock securing said currency
30 means to said housing which when unlocked allows said currency means to move
from a first stored position to a second exposed position for maintenance.

Claim 11 - The machine of claim 10 including an access portal passing
through said front wall allowing said currency means to advance therebeyond.

Claim 12 - The machine of claim 11 wherein said front wall is provided
35 with means for opening said front wall thereby defining a door, and said door
capable of pivoting open by means of a hinge.

Claim 13 - The machine of claim 12 wherein said currency means is
supported on trackway for linear translation.

Claim 14 - The machine of claim 13 wherein said trackway is mounted on a shelf.

Claim 15 - The machine of claim 14 wherein said currency means includes an LED display for communicating with a player.

5 Claim 16 - The machine of claim 15 including means for updating the amount of credit available to a player, and displaying said available credit on a monitor accessible to the player.

Claim 17 - The machine of claim 16 including means for communicating the machine credit status to a central control.

10 Claim 18 - The machine of claim 17 including a personal identification card means accessible to said currency means for transferring credit to and from said machine.

Claim 19 - A method for reducing fills in a gaming machine comprising:
receiving currency to enable a game,
15 sensing the currency both as to denomination and acceptability,
returning unacceptable currency,
storing acceptable currency by denomination,
dispensing the currency correlative with an award based on a pay table.

Claim 20 - A gaming machine comprising, in combination:

20 a currency means medially disposed and adjacent one side of a housing, said currency means exposed on a front wall of said housing,
and slide means coupled to said currency means to allow said currency means to be moved from a stored position to an exposed position, allowing access to said currency means.

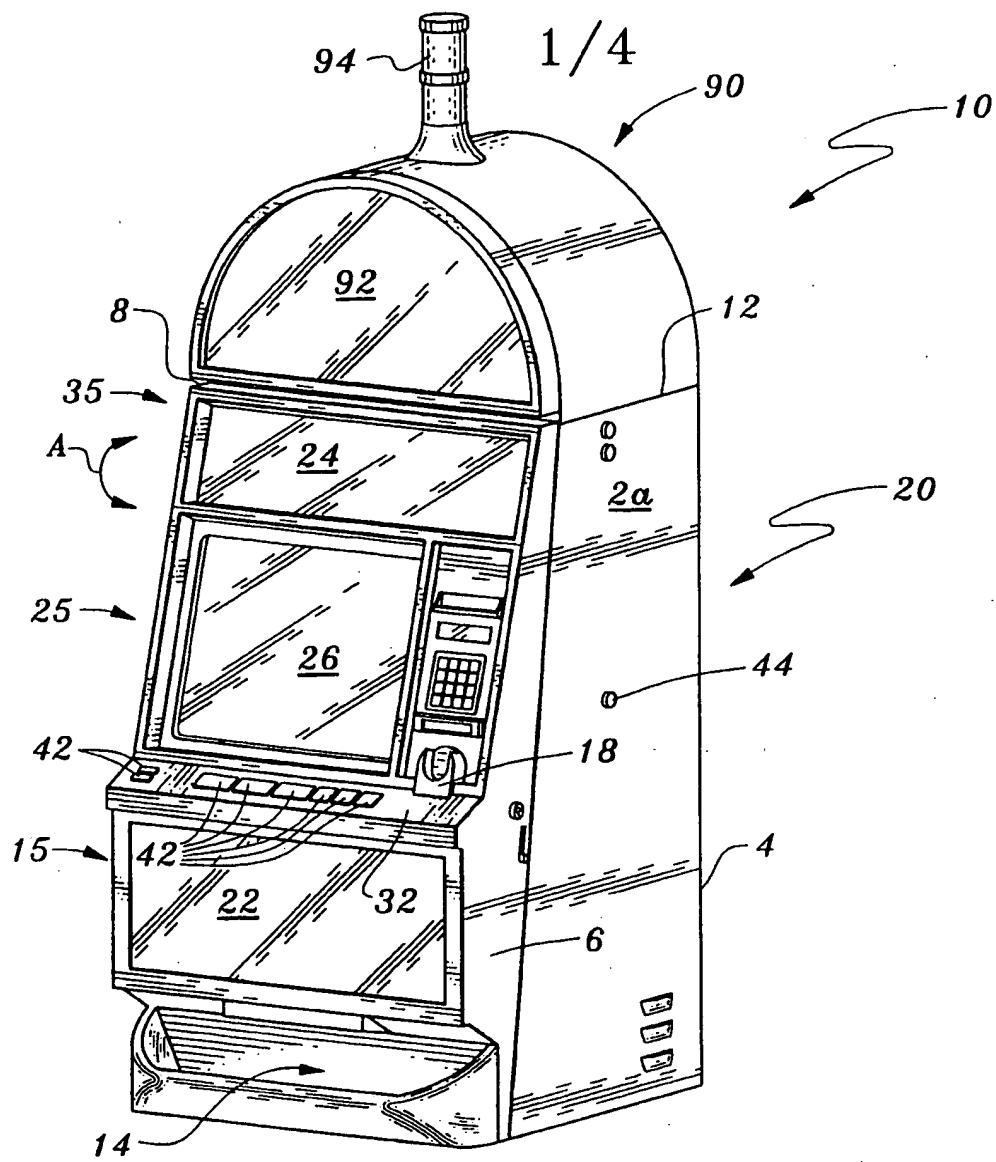


Fig. 1

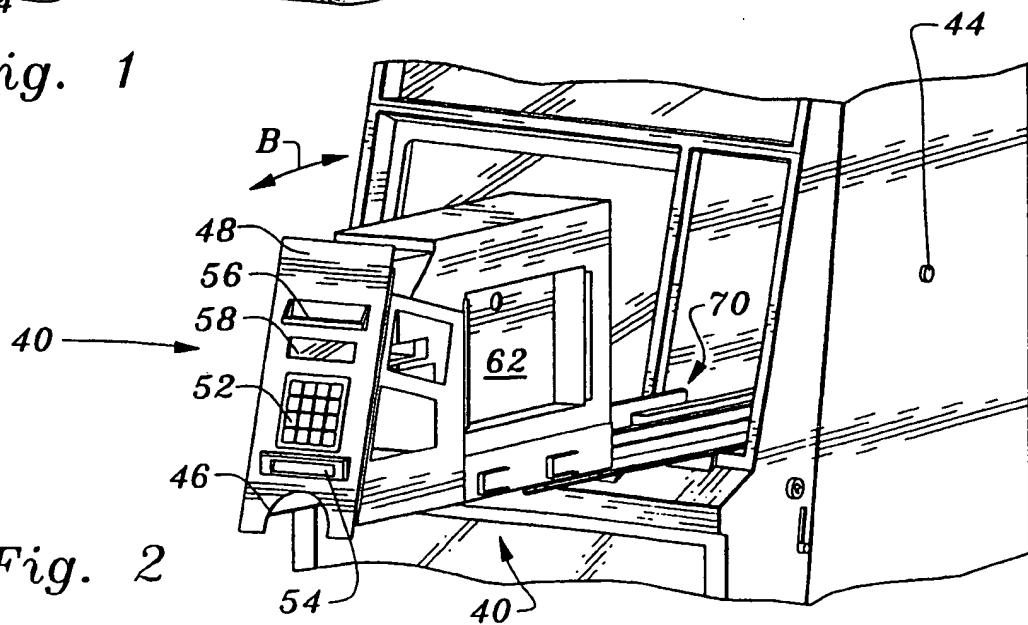
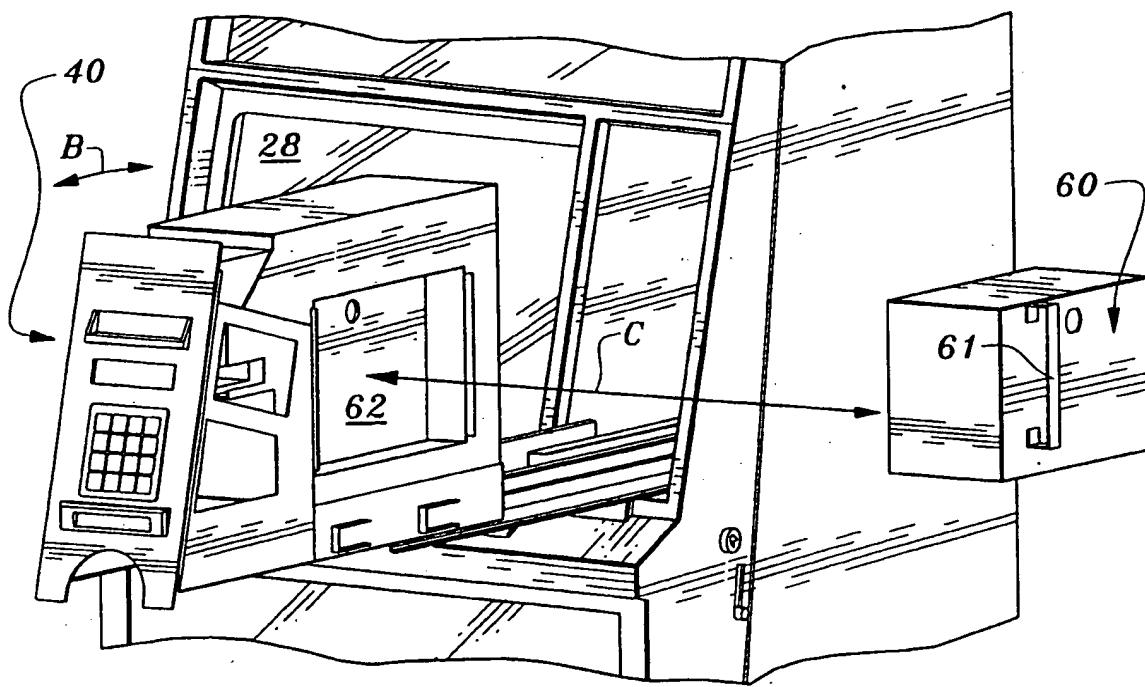


Fig. 2

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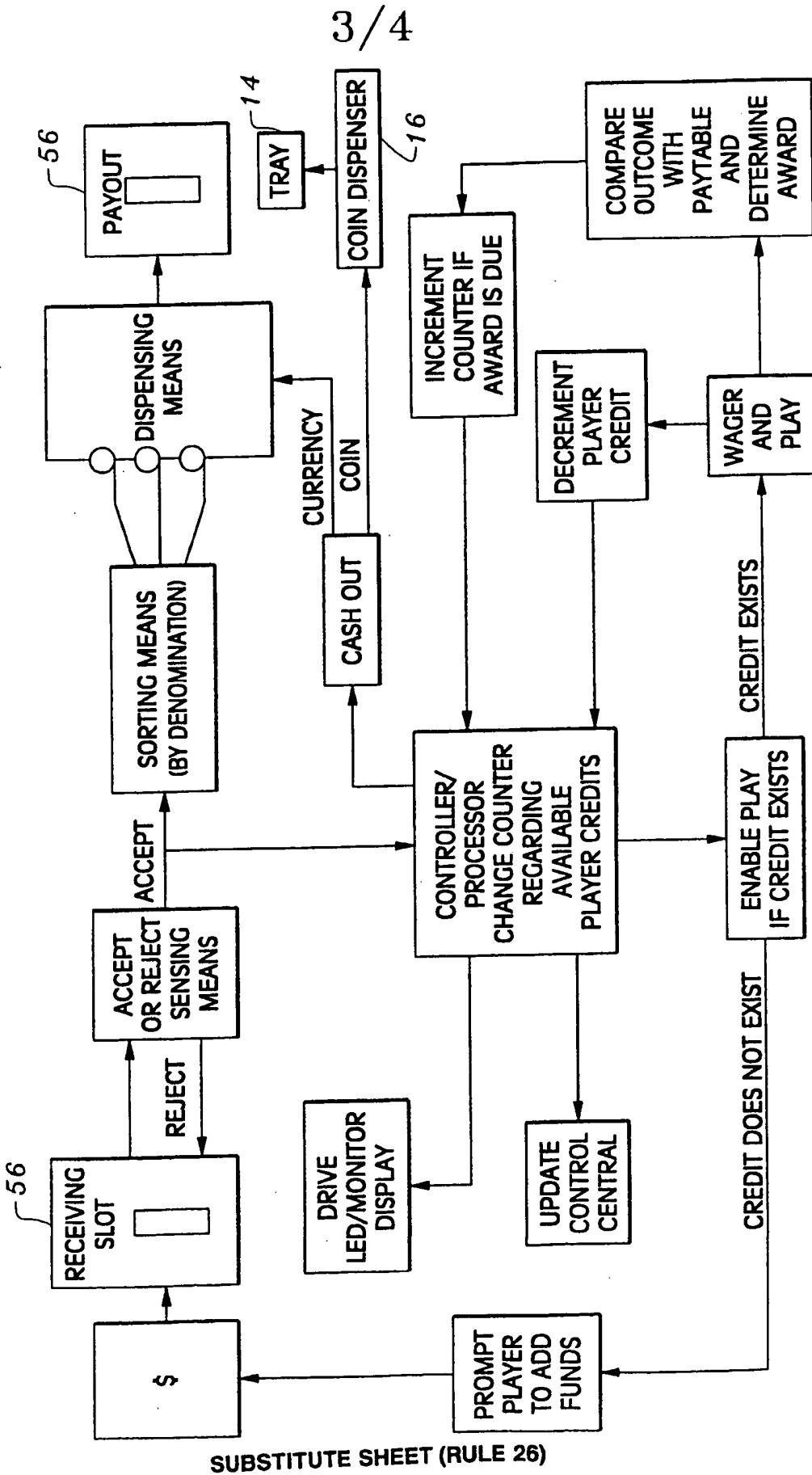
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Fig. 3

Fig. 4



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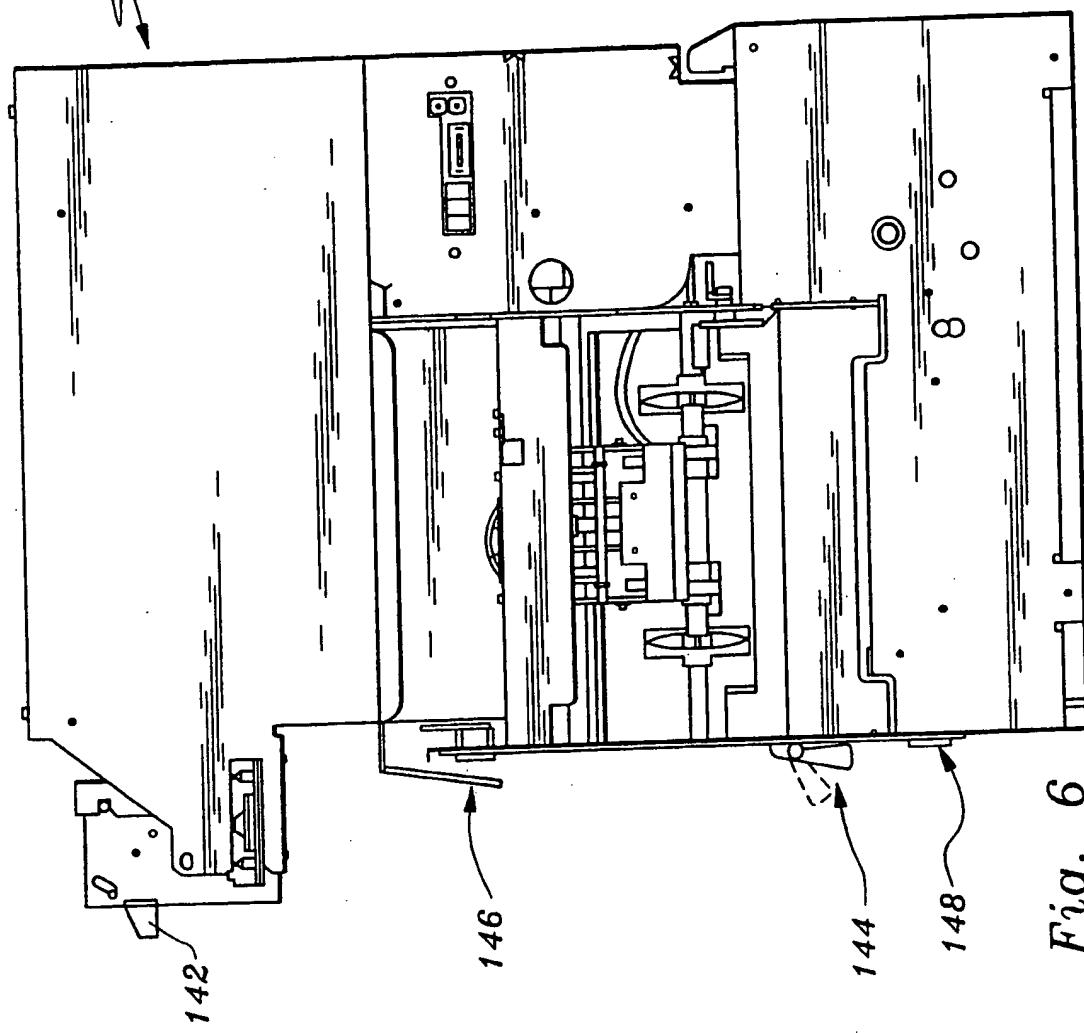


Fig. 6

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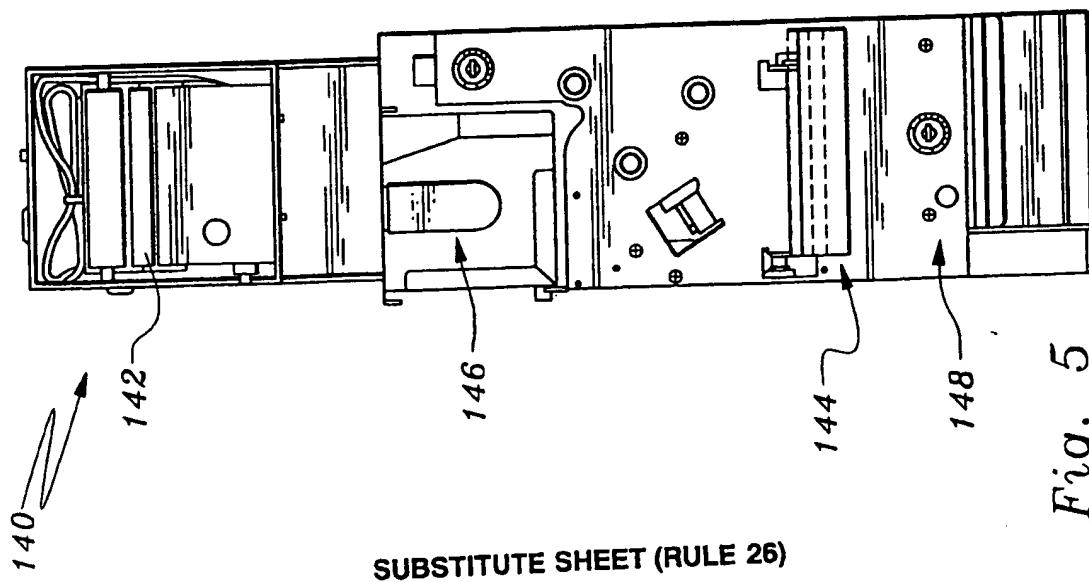


Fig. 5

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US97/17920

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :G07F 17/34

US CL :194/206

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 194/206,207,350; 232/015,016; 273/138.2; 463/016,025

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,544,728A (Dabrowski) 13 August 1996, col. 2, lines 25-67.	1
Y		2-19
X,E	US 5,676,231A (Legras et al) 14 October 1997, col. 4, lines 25-58.	1
X	DE 3,727,927A (Gauselmann) 02 March 1989, abstract.	20
Y		13-18
Y	US 3,397,763A (Wahlberg) 20 August 1968, col. 6, line 1- col. 7, line 4.	2-19
Y	US 4,636,951A (Harlick) 13 January 1987, col. 2, lines 26-61.	17,18

 Further documents are listed in the continuation of Box C.

See patent family annex.

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Date of the actual completion of the international search
09 DECEMBER 1997

Date of mailing of the international search report

20 JAN 1998

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US97/17920

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	US 5,635,696A (Dabrowski) 03 June 1997, col. 3, line 49- col. 4, line 10.	18